## 8.0 FINDING OF NO SIGNIFICANT ENVIRONMENTAL IMPACT

Environmental Assessment for the Emergency Rule to Reduce Sea Turtle Interactions Framework Adjustment to the Fishery Management Plan for Atlantic Tunas, Swordfish, and Sharks

Based on a review of this environmental assessment and the available information relative to the emergency rule, I have determined that there will be no significant environmental impacts from this action. This emergency rule is of limited duration and is expected to result in a reduction of overall sea turtle interactions and mortality with Atlantic pelagic longline fisheries. NMFS intends to complete the reinitiation consultation on the fishery in early 2001, and would implement any reasonable and prudent alternatives prior to the prime fishing season in the NED area (July-October) when pelagic longline gear is used to fish for HMS. Accordingly, preparation of an Environmental Impact Statement for this action is not required by section 102(2)(c) of the National Environmental Policy Act or its implementing regulations.

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Assistant Administrator for Fisheries, NOAA — Date

## 9.0 LIST OF PREPARERS

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## APPENDIX ONE IDENTIFYING THE TIME/AREA CLOSURE

The NED area has a relatively high level of sea turtle takes as documented both through observer and logbook data. For this reason, the EA focuses its time/area closure analyses on this region.

One of the goals of this action is to reduce sea turtle takes in the Atlantic pelagic longline fishery while allowing fishing to continue. In order to accomplish this, NMFS examined logbook and observer data to find "hotspots" or areas within the NED area that have relatively high sea turtle takes. To that end, NMFS constructed a general linear model (GLM) from logbook and observer data ranging from 1992 through 1999 for the NED area by $2^{\circ}$ x $2^{\circ}$ squares by week starting in October. Due to the paucity of both observer data and logbook data for sea turtles, NMFS used both observer data and logbook data to identify these hotspots. In addition, the amount of observer data was not adequate to allow the GLM to fit a model to the data by the least squares method. Instead parameter estimates were used for the observer data.

NMFS received comments that it should do sea turtle analyses on a species-specific level (i.e., loggerhead and leatherback) instead of combining all takes of these two species. However, given the low incidence of reported sea turtle takes and the high level of variation, analyses done on each individual species would not be as precise as combining the species. Additionally, the GLM model on observer data would be even more difficult to fit using species-specific data. Because of these reasons, a species-specific model or results based on species-specific models were not used.

Using the results of the GLM, NMFS plotted the 15 areas and weeks with the highest rate of turtle takes as identified by the logbook and observer data (Figure A.1). NMFS chose to examine further those $2^{\circ}$ x $2^{\circ}$ squares that were identified as hotspots by both the observer and logbook data. Concerns have been raised about using logbook (i.e., self-reported) data in regard to sea turtle analyses because of concerns that fishermen do not accurately report sea turtle takes. However, even if sea turtle takes are underreported in logbooks, the reporting should still be randomly distributed and, therefore should correspond closely to the locations and times given in observer data. The data, as displayed in Figure A.1, appear to support this assumption. Additionally, logbook reports contain more data on sea turtle takes than observer reports, particularly for the NED area during the fourth quarter. Thus, the use of logbook data allows for more thorough analyses than could be done if only observer data were used.

Once the hotspots from the logbook and observer data were identified, NMFS ran both a no redistribution of effort and an effort redistribution model on all logbook data from October through March between 1992 and 1999 on three different possible area closures and three different time frames for a total of nine different options (see Table 6.2). NMFS could not fit these models using observer data because there have been no observers in the NED area in October through March since 1995. The effort redistribution model assumed that the effort (i.e., the number of hooks) that had been in the area would be redistributed to the area surrounding each particular closure. This model did not assume that those hooks would be redistributed in time, just in location. NMFS feels this assumption is justified given the limited effort in terms of vessels in the NED area during the time periods examined and the fact that logbooks indicate

vessels already fish in and out of these areas on the same trip. The models were run for leatherback and loggerhead sea turtle takes combined and swordfish landings. The results indicate that closing the L-shape area described in the final action over a period of eight years could reduce the number of turtles taken by 33 to 45 percent, depending on the redistribution of effort.

The same models were run separately for the effort and catch reported 1998 and 1999 alone in order to assess the fit of a model based on all takes over eight years to recent annual takes. The results are shown in Tables A.1 and A.2 below. These models indicate that depending on the year, the annual reduction in turtle takes could be different for the final action: 8 to 41 percent in 1998 and 14 to 20 percent in 1999 for redistribution and no redistribution of effort models, respectively. The difference in estimates is particularly large for sea turtle takes, as opposed to swordfish landings, because of the low incidence of reported sea turtle takes and the high level of variation. The differences from year to year could be due to a number of factors including changes in the environment as it affects distribution and local abundance of both target finfish and sea turtles, changes in effort both inside and outside the closed areas, and changes in fishing methods.

Figure A.1 The top 15 hotspots identified in both the observer and logbook data. The values indicated refer to the week, the source of data, and the rank with respect to the GLM model: Week (Observer or Logbook, rank). **Bold** indicates that both an area and a week matched in both logbook and observer data. The thick lines indicate the final L shape closure. Week 1 = October 1 through October 7; Week 2 = October 8 through October 14; etc.

| | | Longitude | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 52-51 | 50-49 | 48-47 | 46-45 | 44-43 | 42-41 | 40-39 |
| Latitude | 47-48 | | | | | | 1(O,15) | 1(O,7) |
| | 45-46 | | | | | **1(L,10)**<br>**3(L,15)**<br>**1(O,6)**<br>2(O,8)<br>**3(O,9)** | 3(O,14) | |
| | 43-44 | | | 1(L,3)<br>2(L,13)<br>3(L,6)<br>4(O,5)<br>5(O,1)<br>7(O,12) | 1(L,11)<br>**2(L,12)**<br>4(L,9)<br>**2(O,3)** | **4(L,2)**<br>1(L,4)<br>3(O,2)<br>**4(O,4)** | | |
| | 41-42 | 3 (O,13) | 5 (L,14) | 1(L,1)<br>2(L,7)<br>**3(L,8)**<br>**3(O, 10)** | 1(L,5)<br>6(O,11) | | | |

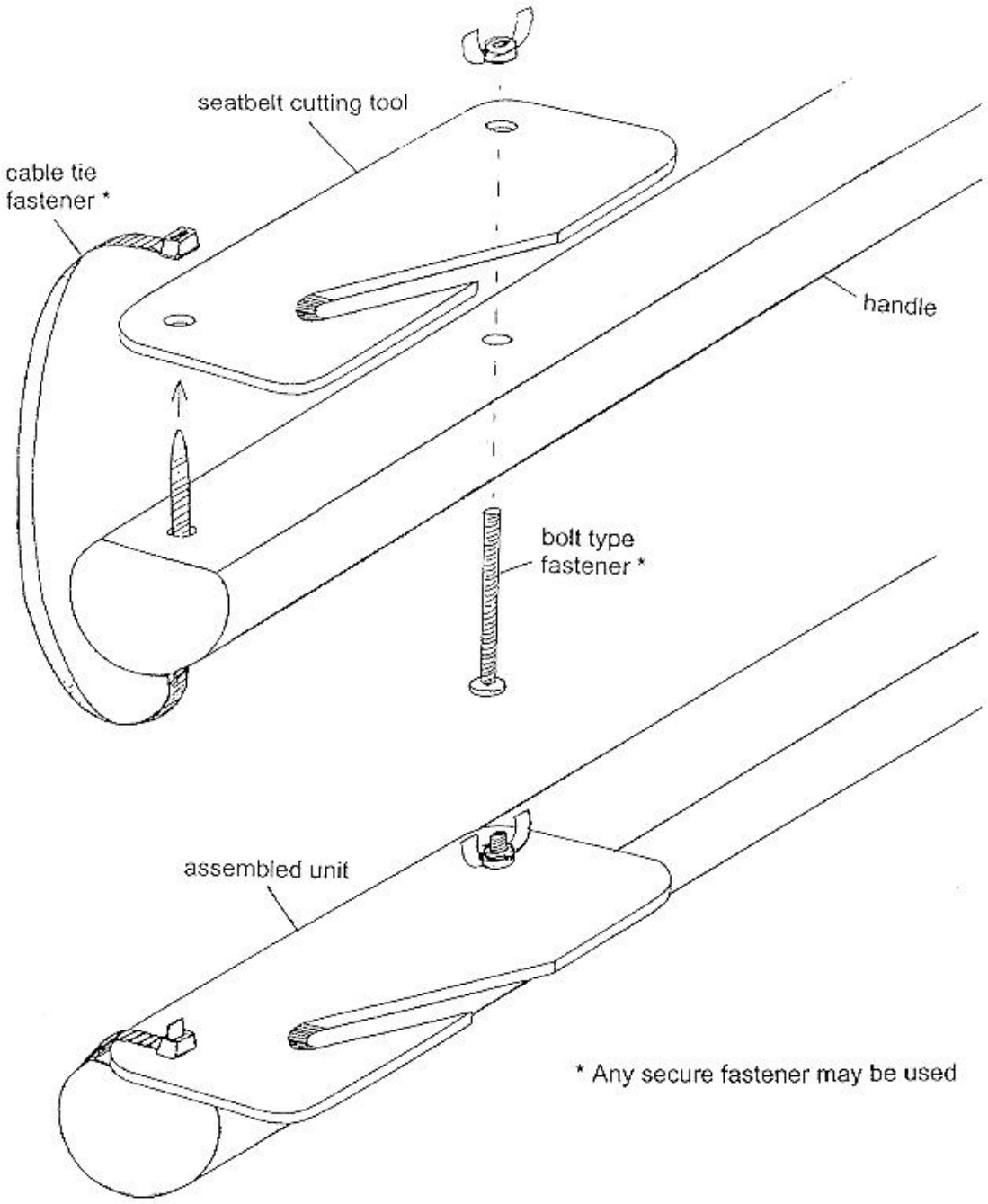
Table A.1 Comparison of the nine different time/area closure options examined under the redistribition and no effort redistribution model using 1998 logbook data. The option in **BOLD** is the final action. Values presented are the reduction in animals taken in both number and percent.

| Area | Dates closed | Turtle reduction No redistribution | Turtle reduction Redistribution | Swordfish reduction No redistribution | Swordfish reduction Redistribution |
|---|---|---|---|---|---|
| 43-45 lat, 43-49 long (2x6 degree) | October 1 - March 31 | 52 (74.3%) | 24 (33.6%) | 2,437 (65.8%) | 165 (4.5%) |
| | October 8 - March 31 | 29 (41.4%) | 6 (8.4%) | 1,983 (53.5%) | 138 (3.7%) |
| | October 15 - March 31 | 21 (30%) | 5 (7.6%) | 1,324 (35.7%) | 73 (2%) |
| 41-45 lat, 45-47 long (4x4 degree) | October 1 - March 31 | 29 (41.4%) | 5 (7.4%) | 2,037 (55%) | 138 (3.7%) |
| | October 8 - March 31 | 18 (25.7%) | -2 (-2.9%) | 1,684 (45.5%) | 86 (2.3%) |
| | October 15 - March 31 | 11 (15.7%) | -2 (-2.5%) | 1,059 (28.6%) | 41 (1.1%) |
| 41-43 lat, 47-49 long and 43-45 lat, 43-49 long (2x2 and 2x6 degree) | October 1 - March 31 | 52 (74.3%) | 23 (32.4%) | 2,504 (67.6%) | 169 (4.6%) |
| | **October 8 - March 31** | **29 (41.4%)** | **5 (7.7%)** | **2,023 (54.6%)** | **141 (3.8%)** |
| | October 15 - March 31 | 21 (30%) | 5 (7.2%) | 1,353 (36.5%) | 82 (2.2%) |

Table A.2 Comparison of the nine different time/area closure options examined under the redistribition and no effort redistribution model using 1999 logbook data. The option in **BOLD** is the final action. Values presented are the reduction in animals taken in both number and percent.

| Area | Dates closed | Turtle reduction No redistribution | Turtle reduction Redistribution | Swordfish reduction No redistribution | Swordfish reduction Redistribution |
|---|---|---|---|---|---|
| 43-45 lat, 43-49 long (2x6 degree) | October 1 - March 31 | 47 (35.1%) | 44 (32.7%) | 658 (21.2%) | 61 (2%) |
| | October 8 - March 31 | 7 (5.2%) | 4 (3.1%) | 540 (17.4%) | 23 (0.7%) |
| | October 15 - March 31 | 2 (1.5%) | 1 (0.5%) | 268 (8.6%) | 15 (0.5%) |
| 41-45 lat, 45-47 long (4x4 degree) | October 1 - March 31 | 128 (95.5%) | 118 (88.4%) | 2,246 (72.2%) | 485 (15.6%) |
| | October 8 - March 31 | 27 (20.1%) | 19 (14.1%) | 1,834 (59%) | 348 (11.2%) |
| | October 15 - March 31 | 11 (8.2%) | 5 (4%) | 1,305 (42%) | 275 (8.8%) |
| 41-43 lat, 47-49 long and 43-45 lat, 43-49 long (2x2 and 2x6 degree) | October 1 - March 31 | 128 (95.5%) | 118 (88.4%) | 2,246 (72.2%) | 485 (15.6%) |
| | **October 8 - March 31** | **27 (20.1%)** | **19 (14.1%)** | **1,834 (59%)** | **348 (11.2%)** |
| | October 15 - March 31 | 11 (8.2%) | 5 (4%) | 1,304 (42%) | 275 (8.8%) |

## APPENDIX TWO EXAMPLE OF LINE CLIPPER DESIGN




Sample Fabricated Arceneaux Line Clipper from 65 FR 16349, March 28, 2000.